ABSTRACT OF THE DISCLOSURE

A method of manufacturing a MOS transistor is provided. A gate insulation layer and a conductive layer are sequentially formed over a substrate. A pre-amorphization implantation is carried out to amorphize the conductive layer. The conductive layer and the gate insulation layer are patterned to form a gate structure. A first spacer is formed on the sidewall of the gate structure. A second pre-amorphization implantation is carried out to amorphize a portion of the substrate. A doped source/drain extension region is formed in the substrate on each side of the first spacer. A second spacer is formed on the sidewall of the first spacer and then a doped source/drain region is formed in the substrate on each side of the second spacer. A solid phase epitaxial process is carried out to convert the doped source/drain extension region and the doped source/drain region into a source/drain terminal. In the pre-amorphization implantations, dopants having an ionic radius greater than the germanium ion are used.